IN THE CLAIMS

Please cancel Claims 2, 17 and 27-30.

Please Amend the remaining Claims in accordance with the following mark-up copy:

1. (Currently Amended) A wireless transmission system comprising:

a first wireless device including:

a first receiver that receives a plurality of forward path radio frequency (RF) signals comprising a plurality of different carrier frequencies modulated with a modulation signal, the different carrier frequencies having approximately the same multipath transmission characteristics between the first and second wireless devices,

a demodulator for detecting the modulation signal in said plurality of forward path RF signals,

a synthesizer for generating a plurality of reverse path RF signals from the modulation signal, and

a first transmitter for transmitting said plurality of reverse path RF signals, wherein the reverse path RF signals are phase coherent with the at least one forward path RF signal; and

a second wireless device including:

a second transmitter that transmits the plurality of forward path RF signals received by said first

receiver of the first wireless device,

a second receiver that receives the reverse path RF signals, a detector that generates amplitude and phase comparison data based on at least the received reverse path RF signal, and

a controller/processor that generates transmission path data using the detected amplitude and phase data and the carrier frequencies and identifies from the transmission path data time delay information for RF signals traveling in a direct path between the first and second wireless device, whereby error introduced by RF signals traveling in an indirect path is reduced or eliminated, and wherein said synthesizer generates said plurality of reverse path RF signals from the plurality of forward path RF signals and each of said plurality of reverse path RF signals is phase coherent with a corresponding one of said plurality of forward path RF signals.

2. Canceled

3. (Original) The wireless transmission system according to claim 1, wherein said detector comprises a phase detector that generates quadrature amplitude and phase data.

4. (Previously Presented) The wireless transmission system according to claim 1, wherein the plurality of forward path RF signals and the reverse path RF signals are full duplex transmissions.

5. (Currently Amended) The wireless transmission system according to claim 1, wherein the plurality of forward path RF signals and the reverse paths RF signals are half duplex transmissions.

Claims 6-9 (Canceled)

10. (Currently Amended) The wireless transmission system according to claim 1, wherein said second wireless device further comprises a second synthesizer for generating a plurality of third RF signals that are phase coherent with the modulation signal, wherein said detector includes a phase comparator for phase comparing the plurality of third RF signals and the plurality of reverse path RF signals.

11. (Currently Amended) The wireless transmission system according to claim 1, wherein said second wireless device further comprises a second synthesizer for generating a plurality of third RF signals that are phase coherent with the plurality of forward path RF signals, wherein said detector includes a phase comparator for

phase comparing the plurality of third RF signals and the plurality of reverse path RF signals.

12. (Original) The wireless transmission system according to claim 1, wherein the controller/Processor uses a Fourier transform to generate the transmission path data using the detected amplitude and phase data and the carrier frequencies.

13. (Original) The wireless transmission system according to claim 12, wherein the controller/processor further uses a peak search to identify the time delay information.

14. (Currently Amended) A wireless communication device comprising:

a transmitter that transmits a plurality of forward path RF signals comprising a plurality of different carrier frequencies modulated with a modulation signal, the different carrier frequencies having approximately the same multipath transmission characteristics between the first and second wireless devices;

a receiver that receives a sequence of reverse path RF signals from a first wireless communication device, wherein the received reverse path RF signals are phase coherent with the plurality of forward path RF signals;

a synthesizer for generating said forward path RF signals;

a detector that generates amplitude and phase data based on the received reverse path RF signals and at least one signal of the

plurality of forward path RF signals; and

a processor that generates transmission path data using at least the detected amplitude and phase data and identifying from the transmission path data time delay information between the received RF signals traveling in a direct path from the first wireless device and the received RF signals traveling in at least one other path from the first wireless device, whereby error introduced by RF signals traveling in an indirect path is reduced or eliminated, wherein said synthesizer generates said plurality of third RF signals phase coherent with the modulation signal, and wherein said detector generates said amplitude and phase data using the received reverse path RF signals and the generated third RF signals.

15. (Original) The wireless communication device according to claim 14, wherein said detector comprises a phase detector that generates quadrature amplitude and phase data.

Claims 16-17 canceled

18. (Currently Amended) The wireless communication device according to claim 14 ~~17~~, wherein the plurality of forward path RF signals are frequency hopping spread spectrum signals.

19. (Previously Presented) The wireless communication device

according to claim 14, further comprising a synthesizer for generating a plurality of third RF signals that are phase coherent with the carrier frequencies of the plurality of forward path RF signals, and wherein said detector generates said amplitude and phase data using the received reverse path RF signals and the generated third RF signals.

20. (Previously Presented) The wireless communication device according to claim 14, wherein said transmitter and receiver transmit and receive the plurality of forward path RF signals and the reverse paths RF signals in full duplex.

21. (Previously Presented) The wireless communication device according to claim 14, wherein said transmitter and receiver transmit and receive the plurality of forward path RF signals and the reverse path RF signals in half duplex.

22. (Original) The wireless communication device according to claim 14, wherein the processor uses a Fourier transform to generate the transmission path data using the detected amplitude and phase data and the carrier frequencies.

23. (Original) The wireless communication device according to claim 22, wherein the processor further uses a peak search to identify the time delay information.

24. (Original) The wireless communication device according to claim 22, wherein the processor determines the distance between the wireless communication device and the first wireless device based on the time delay information.

25. (Currently Amended) A wireless communication device comprising:

a transmitter that transmits a plurality of forward path signals comprising a plurality of different carrier frequencies modulated with a modulation signal, the different carrier frequencies having approximately the same multipath transmission characteristics between the first and second wireless devices;

a receiver that receives a sequence of reverse path RF signals from a first wireless communication device, wherein the received reverse path RF signals are phase coherent with the plurality of forward path signals;

a synthesizer that generates a plurality of local RF signals using the plurality of forward path signals;

a phase comparator that generates amplitude and phase data based on the received reverse path RF signals and the local RF signals; and

a processor that generates transmission path data using the detected amplitude and phase data and frequency information of the received reverse path RF signals and identifying from the transmission path data time delay information between the received

reverse path RF signals +traveling in a direct path from the first wireless device and the received RF signals traveling in at least one other path from the first wireless device, whereby error introduced by RF signals traveling in an indirect path is reduced or eliminated, wherein said synthesizer generates said plurality of local RF signals phase coherent with the plurality of forward path RF signals, and wherein said phase comparator generates said amplitude and phase data using the received reverse path RF signals and the generated local RF signals.

26. (Currently Amended) A wireless communication device comprising:

a transmitter that transmits a plurality of forward path signals comprising a plurality of different carrier frequencies modulated with a modulation signal, the different carrier frequencies having approximately the same multipath transmission characteristics between the first and second wireless devices;

a receiver that receives a sequence of reverse path RF signals from a first wireless communication device, wherein the received reverse path RF signals are phase coherent with the forward path signals;

a synthesizer that generates a plurality of local RF signals that are phase coherent with the forward path signals;

a detector that generates amplitude and phase data based on the received reverse path RF signals and the local RF signals; and

a processor that calculates a direct path distance between the

wireless communication device and the first wireless communication device using the detected amplitude and phase data and frequency information of the received reverse path RF signals, whereby error introduced by RF signals traveling in an indirect path is reduced or eliminated, wherein said synthesizer generates said plurality of local RF signals phase coherent with the plurality of forward path RF signals, and wherein said detector generates said amplitude and phase data using the received reverse path RF signals and the generated local RF signals.

Claims 27-30 canceled